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# Hydrothermal Syntheses of Amino Acid-Montmorillonites and Ammonium-Micas

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**Abstract:** An attempt has been made to synthesize nitrogenous clay minerals hydrothermally from silica-alumina gels in the presence of amino acids, namely glycine and lysine. The products have been characterized by X-ray powder diffraction, by analyses for C and N contents, and by their infrared spectra.

Amino acid-montmorillonites have been prepared under hydrothermal conditions of 200– 250° C and 1000 atm. Above 250° C the amino acids were degraded to ammonium ions, and ammonium-micas were obtained. Syntheses without the addition of amino acids to gels yielded kaolinite.

The role of organic compounds in the formation of clay minerals seems to be of considerable geochemical significance.

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